

Doubling in photonics revenues drives growth

IQE's FY17 results confirm that the photonics volume ramp-up referred to in the pre-close update has delivered the strong growth in revenues (16%) and PBT (18%) that was expected. Based on management's guidance for this growth trend to continue, we upgrade our FY18 estimates and note the potential for sustained growth over the next three to five years.

Year end	Revenue (£m)	PBT* (£m)	EPS* (p)	DPS (p)	P/E (x)	Yield (%)
12/16**	132.7	20.6	2.89	0.0	43.9	N/A
12/17	154.5	24.3	3.36	0.0	37.8	N/A
12/18e	174.9	32.8	3.63	0.0	35.0	N/A
12/19e	203.8	42.3	4.63	0.0	27.4	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments. **Restated.

iPhone X shipments boost H217 revenues

Total revenues rose by 16% to £154.5m y-o-y, slightly ahead of our £150.1m estimate. The 21% rise in wafer sales was predominantly driven by volume ramp-up during H217 of VCSEL programmes which we infer relate to the iPhone X. Photonics revenues doubled while wireless revenues were flat. As we expected, licence fees were significantly lower than in FY16 (£1.9m vs.£6.7m) as the prior year benefited from one-off payments received during the initial phases of the JVs. Adjusted PBT rose by 18% to £24.3m, also slightly ahead of our £23.7m estimate. The group moved from £39.5m net debt at end FY16 to £45.6m net cash at end FY17 following a Placing at 140p/share raising £95m (gross) to finance additional capacity and development work to support expected demand in photonics.

Photonics guidance underpins estimates upgrade

Management estimates that existing volume programmes will deliver 35-60% growth in photonics revenues during FY18. We take a relatively cautious approach, modelling a 40% y-o-y increase in both FY18 and FY19 (FY19 estimates are presented for the first time), but even this necessitates an upwards revision to our FY18 estimates. Management estimates that programmes under development are likely to deliver 40-60% CAGR for photonics revenues over the next three to five years. These include VCSELs for consumer applications such as hand and body tracking, collision avoidance systems, data communications and industrial applications such as heating, indium phosphide wafers for high speed data networks and infrared sensitive wafers for healthcare applications.

Valuation: Growth already priced in

Our analysis of prospective P/E multiples for listed peers indicates that the current price assumes that IQE will perform at the top end of management guidance during FY18 and FY19. It indicates potential for share price appreciation if some of the other programmes under development move into volume production in the next 12-18 months, making management's guidance appear too conservative.

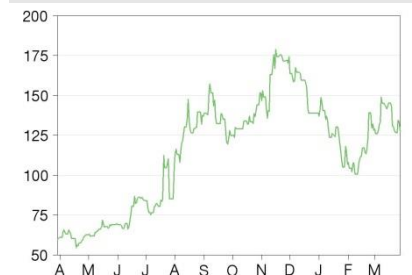
Tech hardware & equipment

29 March 2018

Price 126.9p
Market cap £959m

Net cash (£m) at end December 2017	45.6
Shares in issue	756.1m
Free float	90.5%
Code	IQE
Primary exchange	AIM
Secondary exchange	N/A

Share price performance



%	1m	3m	12m
Abs	(0.9)	(12.2)	117.9
Rel (local)	1.5	(5.3)	124.1
52-week high/low		178.8p	54.2p

Business description

IQE is the leading supplier of epitaxial compound semiconductor wafers globally. The principal applications include radio frequency semiconductors, devices for optical networks, vertical cavity lasers, infrared semiconductors, power electronics and CPV solar cells.

Next events

AGM 4 June 2018

Analysts

Anne Margaret Crow +44 (0)20 3077 5700
 Dan Ridsdale +44 (0)20 3077 5729

tech@edisongroup.com

[Edison profile page](#)

***IQE is a research client of
 Edison Investment Research
 Limited***

FY17 results, guidance and changes to estimates

Management guidance

For the first time management has provided detailed guidance of segmental revenue growth for the current year and over a three- to five-year time horizon. This guidance is summarised in Exhibit 1, together with the growth rates adopted in Edison's estimates, those programmes included in the guidance and those presenting upside to the guidance.

Exhibit 1: Management revenue guidance					
	FY18 guidance	Included in guidance	Upside to guidance	FY18e Edison	FY19e Edison
Wireless growth	0-5%	Existing programmes, some restocking, GaN-on-SiC for base-stations	GaN-on-Si for base-stations (H218 onwards)	1.5%	1.5%
Photonics growth	35-60%	Existing programmes	VCSELs for other mobile phone vendors, VCSELs for other volume applications, InP for communications applications (H218 onwards)	40.0%	40.0%
Infrared growth	5-15%	Night vision and other defence applications	Consumer applications (FY19/20 onwards)	7.0%	7.0%
Power growth	N/A	None	None	None	None
Solar growth	N/A	None	Satellite applications (FY19 onwards)	None	None
3-5 year guidance		Included in guidance	Upside to guidance		
Wireless growth	0-10% CAGR	Existing programmes, GaN-on-SiC for base-stations, GaN-on-Si for base-stations	Filters and switches, integrated front-end modules		
Photonics growth	40-60% CAGR	Existing programmes, VCSELs for other mobile phone vendors, VCSELs for other volume applications, InP for communications applications	Integrated optical modules		
Infrared growth	5-15% CAGR	Defence and consumer applications	-		
Power growth	N/A	None	Power switches		
Solar growth	N/A	None	Satellite applications		

Source: Edison Investment Research, company statements

FY17 results and changes to estimates

Exhibit 2: Summary of changes to estimates							
	FY17			FY18e			FY19e
	Est.	Actual	% change	Old	New	% change	
Revenue (£m)	150.1	154.5	2.9%	165.2	174.9	5.8%	203.8
EBITDA (£m)	35.5	38.4	8.2%	40.3	47.9	18.9%	59.0
Adjusted PBT (£m)	23.7	24.3	2.5%	28.3	32.8	16.1%	42.3
Adjusted EPS (p)	3.26	3.36	3.0%	3.56	3.63	2.0%	4.63
Capitalised R&D	15.0	16.9	12.9%	9.0	9.0	0.0%	0.0
Capital Expenditure	20.0	18.0*	-10.0%	26.0	26.0	0.0%	0.0
Net cash	37.1	45.6	22.8%	35.6	48.1	35.1%	68.1

Source: Company accounts, Edison Investment Research. Note: *Including £6.7m funded through finance leases.

Revenues: we have raised our assumptions for photonics growth and infrared growth in FY18 so that both metrics are in line with management's guidance, leaving our assumption for wireless growth unchanged. This results in changes to FY18 estimates as summarised in Exhibit 2. Since management's guidance for FY18 includes only those programmes currently in commercial production, we infer that it only includes VCSELs (vertical cavity surface emitting lasers) for the face recognition function on the iPhone X, not the proposed rear-facing camera for capturing details of the surroundings for use in Augmented Reality/Virtual Reality applications. As this rear-facing camera requires a much smaller VCSEL array than the face recognition function, volume ramp-up for this function will not have as significant effect on photonics revenue growth as the current volume programme.

Operating margins: since photonics is growing much more strongly than the other segments, the proportion of revenues attributable to this activity increases in prominence, so we expect photonics sales to become similar to those from the wireless segment by FY19 (Exhibit 3). Management has given detailed information on segmental operating margin for the first time. As photonics revenues generate a substantially higher operating margin than wireless revenues (38% vs 15% in FY17), we expect this shift to have a beneficial effect on margins.

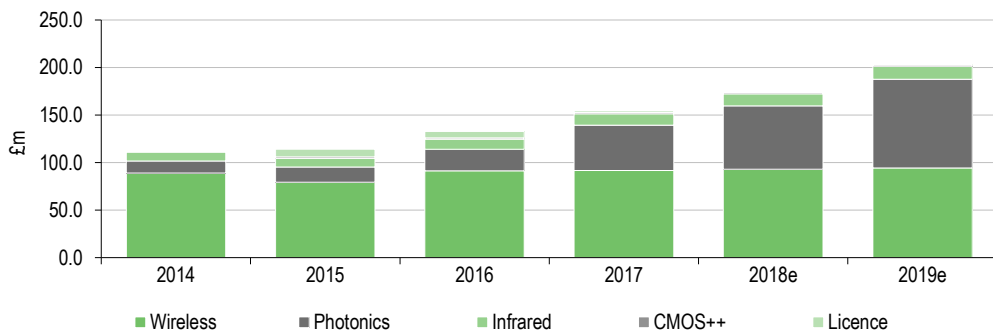
Tax: we apply an effective tax rate of 15% in both FY18 and FY19 (previously 0% in FY18).

Cash conversion: IQE exhibits relatively good levels of cash conversion: 113% in FY17 and 102% in FY16. Our updated model assumes cash conversion in FY18 and FY19 will be maintained at similar levels to FY17.

Capital expenditure: capital expenditure totalled £18.0m (including £6.7m funded through finance leases) in FY17, c £10m of which related to maintenance, as IQE began to add capacity to support further growth in VCSEL production. The first five new reactors are already in place at the new “Mega-Foundry” site in Cardiff and are on track to commence production in H218. A further five reactors (c \$3m cost/reactor) are on order for installation and commissioning by the end of Q318. If demand warrants it, a further 10 reactors may be purchased over the next 12 to 18 months. The Mega Foundry premises are being funded through the Cardiff Region City Deal and have the capacity to host up to 100 reactors, which is similar to the number that IQE already has across its sites in Cardiff, Pennsylvania and Singapore (through its JV there). The payback period on a fully utilised reactor is around a year, so as epitaxy requirements increase, the cash generated from existing tools should be sufficient to purchase additional units without recourse to further financing. We expect that the first five new reactors will be used to satisfy iPhone X requirements, but if demand from this programme is lower than management expects, IQE will be able to use the reactors for other VCSEL programmes or indeed other types of epitaxy. We model £26.0m capex (unchanged) in FY18 and £19.0m in FY19.

Investment in intangible assets: during FY17 IQE increased its investment in product development from £6.3m to £14.5m, primarily reflecting development work on VCSEL programmes, only one of which has moved into volume production so far. There was also £2.4m invested in patenting internally generated IP and purchasing patents from third parties, most recently 54 patents relating to Quasi Photonics Crystals in December 2017. These will help IQE integrate complete 3D sensing systems incorporating a VCSEL light source, wafer level optic, diffractive optical element and silicon light sensor on a single chip. We model annual R&D costs at £9.0m in both FY18 and FY19, as each programme IQE works on with a client requires customised epitaxy which must be qualified before it passes into volume production.

Exhibit 3: Segmental revenues



Source: Company accounts, Edison Investment Research

Valuation

The share price has declined from the peak of 178.75p reached in November 2017 but is still more than double the level it was a year ago. At the current price of 126.9p, the shares are trading at a premium to the mean for its peers on all metrics (Exhibit 4).

Exhibit 4: Peer multiple analysis							
Name	Market cap (\$m)	EV/Sales 1FY (x)	EV/Sales 2FY (x)	EV/EBITDA 1FY (x)	EV/EBITDA 2FY (x)	P/E 1FY (x)	P/E 2FY (x)
Epitaxy							
GCS HOLDINGS	211	2.3	-	10.1	-	14.4	-
INTELLIEPI	115	3.2	-	12.8	-	22.2	18.3
LAND MARK OPTOELECTRONICS	1,196	11.5	8.4	19.4	13.0	31.6	21.0
S.O.I.T.E.C.	2,370	6.1	4.6	24.3	16.3	43.2	27.3
VISUAL PHOTONICS EPITAXY CO	704	7.6	6.9	24.0	18.8	35.8	30.0
WIN SEMICONDUCTORS CORP	4,464	5.9	4.9	13.9	11.0	25.3	19.8
Opto-electronics							
II-VI INC	2,665	2.6	2.2	-	-	25.7	17.8
EMCORE CORP	156	0.9	0.8	9.4	5.9	31.4	15.3
FINISAR CORPORATION	1,801	1.0	1.0	6.3	5.9	16.8	16.8
LUMENTUM HOLDINGS	4,156	3.2	2.5	12.8	9.5	19.1	14.4
Mean		3.6	3.3	14.8	11.5	26.5	20.1
IQE	1,374m	5.2	4.5	19.1	15.5	35.0	27.4

Source: Bloomberg, Edison Investment Research estimates. Note: Grey shading indicates exclusion from mean. Prices as at 28 March 2018.

The size of this premium reduces if we adopt a higher photonics growth rate. However, even if we adopt a 60% growth rate in both FY18 and FY19, which is at the upper end of management guidance, the shares are trading at a premium to the mean P/E for FY18e (31.6x vs 26.5x for peers vs 35.0x Edison base case) but only slightly above the mean P/E for FY19e (22.0x vs 20.1x peers vs 27.4x Edison base case). This suggests that the share price already assumes that IQE will perform towards the high end of management guidance, presenting a risk to the share price if there are any concerns, founded or otherwise, regarding iPhone X sales. On the other hand, Exhibit 1 identifies several programmes which present upside to guidance, suggesting potential for share price appreciation if any of these move into volume production during our forecast period.

If we restrict the comparison to the three listed companies offering epitaxy for VCSELs: IntelliEPI, LandMark Optoelectronics and Visual Photonics, then IQE is trading on P/E multiples that are in line with those for Landmark, which is at the upper end of the three peers. Given that IQE has a much stronger market position than the other three (44% share compared with 7% for LandMark, 5% for Visual Photonics and less than 5% for IntelliEPI, a rating at the upper range of these three (Visual Photonics' 35.8x for FY18 and 30.0x for FY19) seems reasonable. Taking this approach, the shares look fairly priced at current levels despite modelling fairly unambitious photonics growth in our estimates.

Exhibit 5: Analysis of effect of photonics growth on key financial metrics					
Photonics revenue growth in each of FY18e and FY19e	40%	45%	50%	55%	60%
FY18e total revenues (£m)	174.9	177.2	179.6	182.0	184.4
FY18e adjusted PBT (£m)	32.8	33.8	34.7	35.6	36.5
FY18e adjusted EPS (p)	4.08	4.19	4.30	4.42	4.53
Implied FY18e P/E (x)	35.0	34.1	33.2	32.4	31.6
FY19e total revenues (£m)	203.80	210.6	217.6	224.9	232.4
FY19e adjusted PBT (£m)	42.3	44.8	47.4	50.2	53.0
FY19e adjusted EPS (p)	5.25	5.57	5.89	6.23	6.58
Implied FY19e P/E (x)	27.4	25.9	24.5	23.2	22.0

Source: Edison Investment Research

Exhibit 6: Financial summary

	£'000s	2016	2017	2018e	2019e
Year end 31 December		IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS		Restated			
Revenue		132,707	154,480	174,852	203,803
Cost of Sales (Inc D&A + SBP)		(98,538)	(115,857)	(124,304)	(142,976)
Gross Profit		34,169	38,623	50,548	60,827
EBITDA		33,057	38,384	47,910	58,959
Depreciation and Amortisation		(10,938)	(12,025)	(15,166)	(16,699)
Operating Profit (before amort. and except.)		22,119	26,359	32,745	42,261
Acquired Intangible Amortisation		(1,374)	(1,429)	(1,429)	(1,429)
Exceptionals		1,962	(385)	0	0
Share based payments		(2,881)	(7,526)	(7,526)	(7,526)
Operating Profit		19,826	17,019	23,790	33,306
Underlying interest		(1,463)	(2,099)	100	0
Exceptionals		(26)	80	0	0
Profit Before Tax (norm)		20,630	24,340	32,845	42,261
Profit Before Tax (FRS 3)		18,363	14,920	23,890	33,306
Tax		(340)	(435)	(3,583)	(4,996)
Profit After Tax (norm)		20,692	24,823	29,261	37,265
Profit After Tax (FRS 3)		18,023	14,485	20,306	28,310
Average Number of Shares Outstanding (m)		671.5	689.5	756.1	756.1
EPS - normalised (p)		2.89	3.36	3.63	4.63
EPS - (IFRS) (p)		2.66	2.09	2.67	3.73
Dividend per share (p)		0.0	0.0	0.0	0.0
BALANCE SHEET					
Fixed Assets		214,043	224,836	243,241	253,114
Intangible Assets		103,972	108,513	108,418	106,791
Tangible Assets		85,001	90,875	109,375	120,875
Other		25,070	25,448	25,448	25,448
Current Assets		64,323	111,559	126,250	163,644
Stocks		28,498	33,707	39,534	46,117
Debtors		30,868	32,240	38,581	49,451
Cash		4,957	45,612	48,135	68,077
Other		0	0	0	0
Current Liabilities		(51,522)	(44,916)	(47,596)	(55,232)
Creditors		(43,870)	(44,916)	(47,596)	(55,232)
Short term borrowings		(7,652)	0	0	0
Long Term Liabilities		(39,021)	(666)	(666)	(666)
Long term borrowings		(36,854)	0	0	0
Other long term liabilities		(2,167)	(666)	(666)	(666)
Net Assets		187,823	290,813	321,229	360,860
CASH FLOW					
Operating Cash Flow		22,463	29,717	38,423	49,142
Net Interest		(1,489)	(2,125)	100	0
Tax		(839)	(5,844)	(1,000)	(1,200)
Capex		(19,060)	(28,190)	(35,000)	(28,000)
Acquisitions/disposals		(11,250)	0	0	0
Financing		578	94,912	0	0
Dividends		0	0	0	0
Net Cash Flow		(9,597)	88,470	2,523	19,942
Opening net debt/(cash)		23,223	39,549	(45,612)	(48,135)
HP finance leases initiated		0	0	0	0
Other		(6,729)	(3,309)	0	0
Closing net debt/(cash)		39,549	(45,612)	(48,135)	(68,077)

Source: Company accounts, Edison Investment Research

Edison is an investment research and advisory company, with offices in North America, Europe, the Middle East and AsiaPac. The heart of Edison is our world-renowned equity research platform and deep multi-sector expertise. At Edison Investment Research, our research is widely read by international investors, advisers and stakeholders. Edison Advisors leverages our core research platform to provide differentiated services including investor relations and strategic consulting. Edison is authorised and regulated by the [Financial Conduct Authority](#). Edison Investment Research (NZ) Limited (Edison NZ) is the New Zealand subsidiary of Edison. Edison NZ is registered on the New Zealand Financial Service Providers Register (FSP number 247505) and is registered to provide wholesale and/or generic financial adviser services only. Edison Investment Research Inc (Edison US) is the US subsidiary of Edison and is regulated by the Securities and Exchange Commission. Edison Investment Research Pty Limited (Edison Aus) [46085869] is the Australian subsidiary of Edison. Edison Germany is a branch entity of Edison Investment Research Limited [4794244]. www.edisongroup.com

DISCLAIMER

Copyright 2018 Edison Investment Research Limited. All rights reserved. This report has been commissioned by IQE and prepared and issued by Edison for publication globally. All information used in the publication of this report has been compiled from publicly available sources that are believed to be reliable, however we do not guarantee the accuracy or completeness of this report. Opinions contained in this report represent those of the research department of Edison at the time of publication. The securities described in the Investment Research may not be eligible for sale in all jurisdictions or to certain categories of investors. This research is issued in Australia by Edison Investment Research Pty Limited (Corporate Authorised Representative (1252501) of Myonlineadvisers Pty Ltd (AFSL: 427484)) and any access to it, is intended only for "wholesale clients" within the meaning of the Corporations Act 2001 of Australia. The Investment Research is distributed in the United States by Edison US to major US institutional investors only. Edison US is registered as an investment adviser with the Securities and Exchange Commission. Edison US relies upon the "publishers' exclusion" from the definition of investment adviser under Section 202(a)(11) of the Investment Advisers Act of 1940 and corresponding state securities laws. As such, Edison does not offer or provide personalised advice. We publish information about companies in which we believe our readers may be interested and this information reflects our sincere opinions. The information that we provide or that is derived from our website is not intended to be, and should not be construed in any manner whatsoever as, personalised advice. Also, our website and the information provided by us should not be construed by any subscriber or prospective subscriber as Edison's solicitation to effect, or attempt to effect, any transaction in a security. The research in this document is intended for New Zealand resident professional financial advisers or brokers (for use in their roles as financial advisers or brokers) and habitual investors who are "wholesale clients" for the purpose of the Financial Advisers Act 2008 (FAA) (as described in sections 5(c) (1)(a), (b) and (c) of the FAA). This is not a solicitation or inducement to buy, sell, subscribe, or underwrite any securities mentioned or in the topic of this document. This document is provided for information purposes only and should not be construed as an offer or solicitation for investment in any securities mentioned or in the topic of this document. A marketing communication under FCA Rules, this document has not been prepared in accordance with the legal requirements designed to promote the independence of investment research and is not subject to any prohibition on dealing ahead of the dissemination of investment research. Edison has a restrictive policy relating to personal dealing. Edison Group does not conduct any investment business and, accordingly, does not itself hold any positions in the securities mentioned in this report. However, the respective directors, officers, employees and contractors of Edison may have a position in any or related securities mentioned in this report. Edison or its affiliates may perform services or solicit business from any of the companies mentioned in this report. The value of securities mentioned in this report can fall as well as rise and are subject to large and sudden swings. In addition it may be difficult or not possible to buy, sell or obtain accurate information about the value of securities mentioned in this report. Past performance is not necessarily a guide to future performance. Forward-looking information or statements in this report contain information that is based on assumptions, forecasts of future results, estimates of amounts not yet determinable, and therefore involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of their subject matter to be materially different from current expectations. For the purpose of the FAA, the content of this report is of a general nature, is intended as a source of general information only and is not intended to constitute a recommendation or opinion in relation to acquiring or disposing (including refraining from acquiring or disposing) of securities. The distribution of this document is not a "personalised service" and, to the extent that it contains any financial advice, is intended only as a "class service" provided by Edison within the meaning of the FAA (ie without taking into account the particular financial situation or goals of any person). As such, it should not be relied upon in making an investment decision. To the maximum extent permitted by law, Edison, its affiliates and contractors, and their respective directors, officers and employees will not be liable for any loss or damage arising as a result of reliance being placed on any of the information contained in this report and do not guarantee the returns on investments in the products discussed in this publication. FTSE International Limited ("FTSE") © FTSE 2018. "FTSE®" is a trade mark of the London Stock Exchange Group companies and is used by FTSE International Limited under license. All rights in the FTSE indices and/or FTSE ratings vest in FTSE and/or its licensors. Neither FTSE nor its licensors accept any liability for any errors or omissions in the FTSE indices and/or FTSE ratings or underlying data. No further distribution of FTSE Data is permitted without FTSE's express written consent.